

WHAT IS CLAIMED IS:

1. (Withdrawn) A method of determining a desired value for an operating voltage of an integrated circuit, comprising the steps of:

on-wafer probing of one or more reference circuit structures to measure at least one parameter of said one or more reference circuit structures;

determining an adjusted value for said operating voltage based on said measured parameter; and

establishing said adjusted value as said desired value for said operating voltage.

2. (Withdrawn) The method of claim 1, wherein said parameter is an electrical or operational parameter of said one or more reference circuit structures.

3. (Withdrawn) The method of claim 2, wherein said parameter is a leakage current or an operating speed of said one or more reference circuit structures.

4. (Withdrawn) The method of claim 1, wherein said parameter is measured while operating said one or more reference circuit structures at a voltage having a pre-set nominal value.

5. (Withdrawn) The method of claim 1, wherein said probing step comprises measuring a plurality of different parameters of said one or more reference circuit structures, and said determining step comprises determining an adjusted value based on said measured plurality of parameters.

6. (Withdrawn) The method of claim 1, wherein said one or more reference circuit structures comprise integrated circuits fabricated together with said integrated circuit on the same wafer.
7. (Withdrawn) The method of claim 1, wherein said one or more reference circuit structures comprise one or more process control monitor structures.
8. (Withdrawn) A method of determining a desired value for an operating voltage of an integrated circuit, comprising the steps of:
 - measuring at least one parameter of one or more circuit structures of said integrated circuit;
 - determining an adjusted value for said operating voltage based on said measured parameter; and
 - establishing said adjusted value as said desired value for said operating voltage.
9. (Withdrawn) The method of claim 8, wherein said parameter is an electrical or operational parameter of said one or more circuit structures of said integrated circuit.
10. (Withdrawn) The method of claim 9, wherein said parameter is a leakage current or an operating speed of said one or more circuit structures of said integrated circuit.
11. (Withdrawn) The method of claim 8, wherein said parameter is measured while operating said one or more circuit structures of said integrated circuit at a voltage having a pre-set nominal value.
12. (Withdrawn) The method of claim 8, wherein said measuring step comprises measuring a plurality of different parameters of said one or more circuit structures of said integrated circuit, and said determining step comprises determining an adjusted value based on said measured plurality of parameters.

13. (Withdrawn) The method of claim 8, wherein said parameter is repeatedly measured during normal operation of said integrated circuit.
14. (Withdrawn) The method of claim 8, wherein said parameter is measured during testing of said integrated circuit.
15. (Currently amended) A voltage regulator for providing an operating voltage to an integrated circuit comprising:

a voltage down-converter arranged to convert a chip-external supply voltage to a ~~converted~~ the operating voltage based on a signal indicative of a desired value of the ~~converted~~ operating voltage and output ~~the converted voltage as~~ the operating voltage; and

an adjustable signal generator for adjustably generating the signal indicative of the desired value of the ~~converted~~ operating voltage;

~~wherein the signal generator is adjusted in dependence on at least one measured electrical or operational parameter of one or more reference circuit structures~~ a detector for measuring at least one electrical or operational parameter of the integrated circuit when the integrated circuit is operated at a nominal voltage; and

an evaluator to determine the desired value of the operating voltage based on the parameter(s) measured by the detector when the integrated circuit is operated at the nominal voltage and to supply a signal to the signal generator indicative of the desired value.

16. (Original) The voltage regulator of claim 15, wherein the voltage regulator is an on-chip voltage regulator.

17. (Original) The voltage regulator of claim 15, wherein the adjustable signal generator is implemented in a programmable logic device.
- 18.—19. (Cancelled)
20. (Currently amended) The voltage regulator of claim ~~[[18]]~~ 15, wherein the evaluator is implemented in a programmable logic device.
21. (Original) The voltage regulator of claim 15, wherein the reference circuit structures are circuit structures of the integrated circuit.
22. (Currently amended) A voltage regulator for providing an operating voltage to an integrated circuit comprising:
- a voltage down-converter arranged to convert a chip-external supply voltage to a converted voltage based on a signal indicative of a desired value of the converted voltage and output the converted voltage as the operating voltage;
 - an adjustable signal generator for adjustably generating the signal indicative of the desired value of the converted voltage; and
 - a detector for measuring at least one electrical or operational parameter of a circuit of the integrated circuit ~~to produce~~ when the integrated circuit is operated at a nominal voltage and producing a measurement signal that is used to control the signal generated by the signal generator.
23. (Original) The voltage regulator of claim 22, wherein the voltage regulator is an on-chip voltage regulator.
24. (Original) The voltage regulator of claim 22, wherein the adjustable signal generator is implemented in a programmable logic device.

25. (Withdrawn) A circuit for determining a desired value for an operating voltage of an integrated circuit, comprising:

means for measuring at least one parameter of one or more circuit structures of said integrated circuit;

means for determining an adjusted value for said operating voltage based on said measured parameter; and

means for establishing said adjusted value as said desired value for said operating voltage.

26. (Withdrawn) The circuit of claim 25 wherein said measuring means, said determining means and said establishing means are physically located in said integrated circuit.